Montana Wetland Grant Proposal

2009 Wetland Program Development Grants - EPA Region 8 Montana Water Center/Montana Watercourse June 2009

Project Title: Building Wetland Professional Capacity in Montana

Priority Areas: National Priority Areas 1b (regulation) and 1c (monitoring and assessment); Region 8 Priority: Evaluation and Planning of Mitigation in a Watershed Context; Montana

Wetlands Strategic Framework Direction #2: Professional Training.

Name of Applicant: Montana Water Center, Montana State University.

Key personnel: Principal Investigator - Gretchen Rupp, MS, PE, Director, Montana Water

Center, 101 Huffman Building, MSU-Bozeman, Bozeman, MT 59717-2690.

grupp@montana.edu, (406)994-6690, fax (406)994-1774, http://water.montana.edu/

Geographic Location: Montana (statewide).

Total project cost and dollars requested: \$87,930; \$65,930

Abstract: Montana natural-resource professionals in positions ranging from watershed manager to university professor seek in-state wetland training opportunities. The goal of this project is to build professional capacity regarding wetland science, engineering and regulation within Montana. The objective that supports this goal is to initiate a semi-annual training series that will become self-sustaining. Two audiences – wetland professionals and less specialized naturalresource professionals – will be served. The main tasks to be accomplished are to 1) conduct a training needs assessment; 2) identify appropriate trainers within and outside the state, and potential in-state training sites and facilities; 3) work with Montana State University's Extended University to establish a procedure for granting continuing-education credits for wetland professional trainees, and with the Society of Wetlands Scientists to assure Professional Wetlands Scientist credit for courses; 4) plan and conduct two trainings; and 5) conduct outreach in-state to inform natural-resource professionals regarding training availability, and convey project findings and recommendations to peer organizations outside Montana. The medium-term outcomes of the project will be new institutional capacity to provide continuing education, and better understanding among Montana professionals regarding wetland characteristics, the tools available to assess and manipulate them and the rules that govern them. In the longer term, Montana wetland delineations and mitigation projects will have an increased likelihood of success, land development will be more sensitive to wetland benefits, university students will be exposed to richer curricula in wetland science and policy, and Montana wetlands will be conserved.

PROJECT DESCRIPTION

2.a Project description

The goal of this project is to *build professional capacity* regarding wetland science, engineering and regulation within Montana. To do this, the project team will conduct a needs assessment, identify potential trainers and training sites, plan and conduct two trainings that initiate a self-supporting semi-annual training series, and establish a procedure for granting continuing-education credits for wetland professional trainees. The project includes outreach within the state to inform natural-resource professionals about wetland training opportunities, and to peer organizations in other states that may wish to initiate similar programs. All project activities are development, program-building activities that are outside the scope of existing regulatory requirements.

2.b Project Tasks

Five principle tasks comprise the project:

Needs assessment – Design electronic survey vehicle, vet it with the Montana Wetlands Council, then use the Council's contact lists to query potential trainees, their clients and regulators regarding topics of greatest interest. Target two audiences – wetlands professionals, and natural-resource professionals with broader portfolios who sometimes deal with wetlands (including professors and university students). Query potential trainees in-depth regarding their preferred modes of training, training budgets, scheduling, and continuing-education credentials needed. Follow up on the two electronic surveys with telephone contact, if needed. Survey potential partner organizations regarding their willingness to co-host trainings in conjunction with their conferences. Product: summary assessment report of wetland professional training needs and opportunities.

Trainer/ facility inventory – Compile an inventory of professionals both in-state and out-of-state who could conduct the identified trainings. Assess physical facilities – field and classroom - within the state. Products: trainer listing, with capabilities, experience, cost and schedules; inventory of available sites/facilities and their costs and features.

Collaborate with the Extended University at Montana State University to establish a procedure for granting continuing-education credits for wetland professional trainees. Work with the Society of Wetland Scientists to assure that courses designed for Montana wetland professionals meet its criteria for education contributing to Professional Wetland Scientist certification.

Initiate a series of semi-annual professional wetland trainings within Montana by conducting trainings on the two most-vital topics identified in the needs assessment. Charge fees that are acceptable to potential trainees and sufficient to underwrite planning and conduct of further trainings. Potential topics: Vulnerable Wetlands – Identification and Protection; Montana Department of Transportation Rapid Assessment Techniques; Current Wetland Regulations.

Product: 50-75 natural-resource professionals with up-to-date knowledge of technical wetland topics; designated fund to underwrite training courses after the conclusion of this project; professional network and tested procedure for scoping, planning and conducting two trainings per year within Montana.

Conduct outreach to natural-resource professionals within the state regarding the availability and content of training, and to peer organizations in other states regarding project activities, challenges and successes (see 2m below – Transfer of Results and Outreach). Evaluate the success of each training, and the extent to which attendees subsequently apply what they learned in the conduct of their professional duties.

2.c Milestone Schedule

Task	Months 1-6	Months 7-12	Months 13-18	Months 19-24
1. Training needs				
assessment				
2. Trainer/ field site				
inventory				
3. CEU process				
4a. Plan trainings				
4b. Conduct trainings			х	х
5a. In-state outreach				
5b. National outreach				
5c. Evaluation				

2.d Statement of Need

Montana wetland professionals and other natural-resource professionals seek continuing education, but have few opportunities for training in-state. Many have difficulty traveling out of state for their training:

- A one-day wetland identification workshop in October 2005, pitched to non-specialist resource professionals, accepted 60 applicants and had to turn away half that many, several weeks before it was scheduled to take place.
- o In October, 2008, 37 professionals made time to participate in a three-day wetland field training organized on very short notice by the Montana Department of Transportation.
- Although they graduate hundreds of students each year who will become natural-resource
 professionals or managers, neither Montana State University nor the University of Montana
 offers a course devoted to any aspect of wetland science, except for engineered treatment
 wetlands.
- A 2009 e-mail query to University-system faculty who are water experts elicited the response that almost none feel qualified to teach wetlands topics, but they and their students would like the opportunity to take wetlands short courses.

The Montana Wetlands Strategic Framework 2008-2012 establishes eight strategic directions, one of which is Professional Training. The Montana Wetland Council's Public Education and Professional Training Workgroup includes the tasks "develop two professional trainings for 2010" and "research the possibility and development of continuing education credits for professional groups" in its 2009 workplan. This project aims to achieve these objectives, and to lay the groundwork for an ongoing program of professional wetland training in the state.

2.e National and/or Regional Priority Areas

This project addresses National Priority Areas 1b (regulation) by bolstering understanding of current laws and regulations and 1c (monitoring and assessment) by developing a cadre of professionals versed in up-to-date wetland monitoring and assessment techniques. Benefits will accrue to individual landowners, the professionals and the Corps of Engineers, but society at large will also benefit from more accurate monitoring and assessment that maintain the function of the entire wetland. Evaluation that omits a portion of a wetland could jeopardize the function of the entire wetland and its associated communities (plant and animal). The project supports the Regional Priority Area "Evaluation and planning of mitigation in a watershed context" in several ways, primarily by training wetland professionals regarding the data sources to be utilized in

planning mitigation projects that fully account for watershed characteristics. The project directly implements Strategic Direction #2 of the Montana Wetlands Strategic Framework, to "...provide training and information for public and private resource professionals" so that they "...are knowledgeable, trained, and prepared to integrate wetland and riparian conservation, management, and restoration into their work."

2.f Project Goals and Objectives

Stated Objective/Link to EPA Strategic Plan: The goal of this project is to build professional capacity regarding wetland science, engineering and regulation in Montana. The objective supporting this goal is to initiate a self-sustaining semi-annual training series. This supports *Sub-Objective 4.3.1: Increase Wetlands* of EPA's Strategic Plan.

Outputs: The output of this project will be new institutional capacity that bolsters the incorporation of up-to-date technical information, assessment, monitoring and mitigation methods, and regulatory understanding into wetland projects and land use planning throughout Montana. Short-term progress towards achievement of this output will be estimated by examining course evaluations submitted by attendees, that address what they have learned and how they're likely to make use of their new knowledge. We'll also track the number of Professional Wetland Scientists in the state (currently 8).

Outcomes: The ultimate outcomes of the project will be more successful mitigation projects, use of a broader palette of techniques to conserve wetlands, application of scientifically-rigorous methods of watershed planning that protect wetlands, and more accurate assessment of the boundaries and condition of specific wetlands and the success of mitigation projects. Progress toward achieving these outcomes that is directly attributable to this project would be difficult to document. As a surrogate measure, the project team will query all of the trainees from the first training at the conclusion of the project, regarding how they have incorporated concepts they learned as a result of the project into their professional activities; responses will be relayed to EPA in the Final Technical Report.

Established Baseline for Measurement: The baseline condition is the status quo. Montana natural-resource professionals who lack travel funding are not up-to-date with respect to wetland science and regulation, and consequently not designing the best projects that they could.

2.i Staffing Information

Between the Montana Water Center and its branch the Montana Watercourse a staff of eight is available to conduct this project. Their collective expertise includes adult education and outreach, wetlands education and training development for water professionals. Project Manager Gretchen Rupp is the Director of the Montana Water Center. She has led the EPAfunded Montana Technical Assistance Center for Small Water Systems since 2000. That program develops and deploys computer-based training courses for water- and wastewatersystem operators nationwide; more than 50,000 operators have taken its courses. As Extension Environmental Engineer, Rupp obtained a seed grant and initiated a series of training courses for Montana engineers, regulators and installers concerning onsite wastewater management. Debbie Earl will serve as liaison with the Montana Wetlands Council. Earl manages the Montana Watercourse, a statewide water education organization with community, K-12 and volunteer monitoring programs. She co-chairs the statewide network known as the Montana Watershed Coordination Council, and has led several wetlands outreach projects within Montana. Steve Guettermann will be Outreach Director for the project, responsible for organizing successful training events. Guettermann has degrees in natural resources management and science education. As Assistant Director for Outreach at the Water Center, he manages projects to educate future water professionals, and apply research results to the continuing education of working water professionals in the state and Nation. Kathryn Sayles will serve as adult educator for the project, responsible for

identifying high-priority training topics, plus instructors and facilities. Sayles is Education Outreach Coordinator at the Montana Watercourse. She has degrees in biology and environmental policy. Resumes of key project personnel are appended to this application.

2.j Applicant's Experience

The Montana University System Water Center was created in 1964, with continuing education of water professionals as a core part of its mission. The Montana Watercourse came into being within the Water Center in 1989, to conduct Project WET and other community and K-12 water education programs within the state. The two organizations work closely together, both employing outreach professionals with degrees in water science, engineering or policy. Recent experience pertinent to the proposed project includes:

- o <u>A Landowner's Guide to Montana Wetlands 2nd Edition</u> and <u>Landowner's Guide to Eastern Montana Wetlands and Grasslands</u> (2008, EPA-funded), completed in partnership with several agencies, non-governmental organizations and landowners
- o <u>Representing Properties with Wetlands and Riparian Areas: Guidebook for Montana Realtors</u> (2007, EPA-funded)
- Wetlands and riparian areas: continuing education course for realtors (2008-10, EPA-funded via Montana DEQ), course attended by 342 realtors to date
- Small Water Systems Technical Assistance Center (1995-present, EPA-funded), continuing education for water system operators, managers and board members (also some wastewater operator training);
- Annual <u>Montana Water Conference</u> (1979-present), for academic, agency and private-sector water professionals, organized in partnership with the Montana Chapter – AWRA
- Decision-Makers' Guide to Montana's Water (2009-2011), water primer for local elected officials funded by the Montana Department of Natural Resources & Conservation
- O Topical water conferences: 7th International Symposium on Fish Physiology, Toxicology & Water Quality (2003, EPA-funded), International Colloquium on Protecting Public Health in Small Water Systems (2004, EPA-funded), Western Wetlands Conference (2005, EPA Region 8, 185 resource professionals from 22 states), Northwest Water Policy & Law Symposium (2006), Montana Watershed Symposium (2006, EPA-funded via RGI grant).

The readiness and ability of the Water Center/Watercourse team to conduct the proposed project stem from its:

- Wetlands outreach project experience Montana Watercourse has successfully completed several wetland program development projects, participates actively in the Montana Wetlands Council and has an ongoing role defined in the Council's workplan
- Flexible project approach both organizations are grant-funded, and engage staff, contractors or other partners as appropriate to meet the needs of each project
- Technical rigor and credibility with audiences, which arise from the team's university home and its strictly science-based, non-advocacy approach to contentious issues
- o Statewide network of colleagues, including past and current project collaborators.

2.k Partnership Information

The project team will work with the Montana Wetlands Council to coordinate with Montana Wetlands Legacy, Montana Fish, Wildlife & Parks, the Montana Department of Transportation, and the Montana offices of the Bureau of Land Management, the Natural Resources Conservation Service, the US Fish & Wildlife Service, the US Army Corps of Engineers and environmental consultants. These organizations will be asked to help scope and publicize the trainings and identify instructors and sites. We'll communicate closely with the Society of Wetland Scientists as we plan the advanced training for wetland professionals, to assure it will

qualify attendees for credit toward their PWS certification. Letters of support from intended partners are attached to this proposal.

2.m Transfer of Results and Outreach

A two-part outreach effort is planned. Within Montana, the availability and nature of training opportunities will be publicized in conjunction with regular outreach by the Montana Wetlands Council. Electronic publication vehicles will include the e-newsletters of the Council, the listserv of the Montana Watershed Coordination Council (MWCC) and the *Montana Water* e-newsletter. Likely presentation venues include quarterly meetings of the MWCC, plus conferences of the Montana Section - AWRA, the Montana Section - ASCE, the Montana Chapter - Soil & Water Conservation Society, the Association of Montana Floodplain Managers and the Montana Water Environment Association. The chief vehicle for outreach outside Montana will be an article for publication in the *Journal of Contemporary Water Research & Education* of the Universities Council on Water Resources. The Principal Investigator will present the project results at the annual meeting of the National Institutes for Water Resources. A project summary and links will be posted on the Montana Water , Montana Wetlands Council and Montana Watercourse websites.

3. BUDGET NARRATIVE

COST CATEGORY	notes	Task 1 Needs assess	Task 2 Site inventory	Task 3 CEU process	Task 4 Plan & conduct trainings	Task 5 Evaluation & outreach	TOTAL
Salaries	а	\$5,966	\$3,070	\$1,966	\$7,016	\$5,050	\$23,068
Fringe Benefits	b	\$2,096	\$1,073	\$785	\$2,540	\$1,755	\$8,250
Travel	С	\$100	\$500	\$0	\$5,000	\$1,000	\$6,600
Supplies	d	\$100	\$100	\$0	\$600	\$100	\$900
Contractual	е	\$0	\$0	\$0	\$8,000	\$0	\$8,000
Other	f	\$500	\$200	\$0	\$1,000	\$500	\$2,200
TOTAL DIRECT COSTS		\$8,762	\$4,943	\$2,751	\$24,156	\$8,405	\$49,018
INDIRECT COSTS	g	\$3,023	\$1,705	\$949	\$8,334	\$2,900	\$16,911
EPA TOTAL		\$11,785	\$6,649	\$3,700	\$32,490	\$11,305	\$65,930
COST SHARE	h	\$0	\$0	\$0	\$22,000	\$0	\$22,000
PROJECT TOTAL		\$11,785	\$6,649	\$3,700	\$54,490	\$11,305	\$87,930

Notes

- a. Includes professional salaries, hourly support staff time and hourly student assistant.
- b. Benefits assessed at 34% for professional, 45% support and 10% student labor.
- c. All travel in-state, at projected Montana state rates. 10 person-days travel for meetings and outreach, two 4-day courses transporting 40 attendees each among field and classroom sites; provision of lunches and snacks.

- d. Office supplies and software to be used specifically for this project; supplies for attendees of trainings, such as soil color charts, plant keys, etc.
- e. Costs associated with bringing contract instructors in from out of state for up to 8 days' worth of trainings.
- f. Rental (classrooms, AV equipment, bullhorn, field equipment) \$1000; communication (conference phones, courier service, remote Internet) \$300; assistance in designing survey vehicles from MSU College of Business \$500; professional conference registration \$400.
- g. The indirect cost rate for projects of this type, negotiated between Montana State University and the National Institutes of Health, is 34.5%.
- h. Montana State University prohibits project managers from claiming more cost share than the minimum required by the project sponsor. It also requires that the indirect costs that would have been associated with the cost share be claimed as part of the cost share. Therefore, the cost share pledged herein comprises part of the training time of the non-federal attendees, calculated thus:

 30 professional attendees x 18.175 hrs training x \$30/hr x 1.345 =\$22,000.

We anticipate these additional, non-documented contributions: at least 20 hours of time from Debbie Earl, Montana Watercourse Director (state employee); >400 more person-hours course participation by non-federal attendees; *pro bono* planning assistance and course instruction from university-system, state and federal employees amounting to 60 hours professional time; hosting of trainings at state and private sites for 2-4 days; 1-2 days staff time at MSU Extended University to set up the CEU protocol.

4. PAST PERFORMANCE

Montana Wetland Outreach and Education, (EPA funds administered through Montana DEQ, \$58,848, contact Lynda Saul, <u>lsaul@mt.gov</u>). Final report submitted August, 2007. Montana Watercourse successfully managed this agreement and met reporting requirements. Its efficiency in executing grant obligations left funds remaining after completion of several tasks, so the contract was modified to add activities and extend the timeline.

Wetland Stewardship Education for Montana, 2006 -2008 (EPA via Montana DEQ, \$45,300, contact Lynda Saul, lsaul@mt.gov). Montana Watercourse documented progress towards achieving goals with task completion reports and personal contacts with the MDEQ Wetlands Program manager. The grant closed on schedule September 30, 2008 and the final technical and financial reports were submitted in November 2008.

Water Quality Education and Outreach (EPA funds via Montana DEQ, \$152,574, contact Robert Ray, rray@mt.gov). The final report was submitted August 2007 for this CWA section 319 grant. Montana Watercourse successfully executed and reported on activities designed to foster stakeholder involvement and engage local citizens in water quality monitoring. A revised volunteer monitoring guidebook was printed and distributed. Quarterly and final progress and financial reports were submitted as contractually required.

Small Water Systems Technical Assistance Center (EPA Office of Water, \$500,000, contact Holly Waldman, waldman.holly@epa.gov). During the period October 2006-December 2007 Montana Water Center submitted quarterly technical and financial reports to EPA. The final technical report and the deliverable, a computer-based training course for water system operators nationwide, were submitted in February 2008.

Small Water Systems Technical Assistance Center (EPA Office of Water, \$344,500, contact Maura Browning, Browning.Maura@epa.gov). The project runs from October 2008-December

2009. Montana Water Center submits quarterly technical and financial reports to the EPA Program Officer, and coordinates with the other TACs and EPA staff through one meeting in Washington and conference calls. The purpose of this project is to develop and distribute a training curriculum for small water system personnel concerning energy efficiency and water conservation.

ATTACHMENTS

Resumes of Key Personnel Letters of Support GRETCHEN L. RUPP 221 Lindley Place Bozeman, MT 59715 (406) 586-8363 beesgr@imt.net

CAREER OBJECTIVE

To improve the natural and human environment through the successful management of science and engineering programs adhering to the highest degree of technical rigor.

EDUCATION

MS, Civil and Environmental Engineering, Utah State University, 1981 BA, Biology, Carleton College, 1976, *cum laude*, with departmental honors

PROFESSIONAL REGISTRATION

Professional Engineer, Montana, License 10603 PE (1990) Professional Civil Engineer, California, License C 38705 (1984)

AFFILIATIONS AND SERVICE

Member - American Water Works Association, International Water Association, American Water Resources Association

President - National Institutes for Water Resources (2005-7)

Board member - Universities Council on Water Resources (2003-5)

Chair, Water Resources Group, National Association of State Universities and Land Grant Colleges (2005-7)

President – Montana Section American Water Resource Association (1996-7)

Member – Gallatin City-County Board of Health (2008-present)

Member – Gallatin Local Water Quality District Board (2008-present)

PROFESSIONAL EXPERIENCE

2000 - present. Director, Montana University System Water Center, Montana State University.

Responsible for the operation of a grant-funded research and outreach organization with up to 30 employees, an aquatic sciences laboratory and an annual budget up to \$3 million. Principal program areas are water quality, small water utilities, public outreach, fisheries and aquatic health. See http://watercenter.montana.edu/

1994 - 2000. Adjunct Assistant Professor of Civil Engineering, Montana State University. Appointment divided among the Montana Water Center, the MSU Extension Service and the Department of Civil Engineering. Served as Water Center Assistant Director and managed the Small Systems Technical Assistance Center, overseeing development of training courses and demonstrations of innovative treatment technologies at public water systems. As Extension Environmental Engineer, acted as consultant to engineers, public works directors and Montana citizens on issues of water and wastewater treatment, water quality, livestock wastes, air quality, and solid and hazardous wastes. Organized professional training courses, produced educational materials, made presentations, served on oversight committees, responded to requests for information or

assistance. As Civil Engineering faculty member, taught environmental engineering and advised graduate students.

- 1988 1994. Independent Environmental Consultant, Bozeman, Montana. Organized workshops on radioactive waste, soil sampling and hazardous waste characterization, and edited the proceedings; coordinated biological baseline studies for hardrock mining; served as technical advisor to businesses and communities with hazardous-waste-site liability; prepared guidance documents on soil and waste characterization and soil treatability testing at Superfund sites. Clients included the City of Livingston, Montana, the US Environmental Protection Agency, Stillwater Mining Company, and the Park County Environmental Coalition.
- **1987 1988. Senior Environmental Engineer, MSI Detoxification Inc., Bozeman, Montana.** Projects included environmental site assessments, development of site sampling and waste treatment workplans, and managing the vegetation and runoff investigations of the ASARCO East Helena Superfund investigation.
- 1981 1987. Staff Environmental Engineer, Tetra Tech, Inc., Lafayette, California and Butte, Montana. Collected data, performed technical evaluations and prepared reports concerning wastewater discharge, electric utility solid wastes, leaching of coal fly ash and scrubber sludge, and the environmental impacts of Midgetman missile deployment in Montana. Developed calculation methods for assessing pollutant behavior in the environment; prepared guidance documents; taught water quality assessment workshops. Served as project biologist in evaluating effects of hydropower development on montane fish habitat. Managed the field office and investigations for the Anaconda Smelter Remedial Investigation. Clients included the Electric Power Research Institute, the US Environmental Protection Agency, Pacific Gas & Electric, ARCO, and the Air Force.
- 1978 1981. Graduate Research Assistant, Utah Water Research Laboratory, Utah State University. Examined the influence of benthic periphyton on the geochemistry of montane streams. Thesis title: Calcium carbonate precipitation as influenced by stream primary production.
- **1976 1978. Staff Biologist, Bermuda Biological Station, St. Georges West, BERMUDA**. Planned and conducted studies of the distribution, ecology and physiology of nuisance algae in shallow inshore waters. Participated in studies defining benthic marine communities and water quality, by field sampling, aerial photography, radiotracer experiments, laboratory analysis and data interpretation.

RESEARCH AND OUTREACH HIGHLIGHTS

Since 2000, more than 50,000 water-industry professionals, especially personnel of small public water systems, have used the interactive training courses developed by the Montana Water Center – see http://watercenter.montana.edu/training/default.htm

Recent grant-funded research and outreach have concerned the health of aquatic ecosystems (funded by the U.S. Fish & Wildlife Service, Montana Fish, Wildlife & Parks, U.S. Environmental Protection Agency and the State of Montana), small public water systems (EPA and Agriculture Canada), water line corrosion (International Copper Association), stormwater control (EPA and the Montana DEQ) and wetlands education (EPA).

SELECTED PUBLICATIONS AND EXTENSION BULLETINS

Butterfield, P.W., A. K. Camper and G.L. Rupp. 2007. Online tool helps utilities assess microbial contamination risks. *Opflow* 33(1): 20-24.

Rupp, G.L. and G. Brittan. 2006. Northwest Water Policy & Law Symposium: Policy White Paper. Montana Rupp

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- State University. http://watercenter.montana.edu/pdfs/Policy white paper.pdf
- Rupp, G.L. and B. Cichowski. 2006. Rainwater Harvesting Systems for Montana. MontGuide 9707. MSU Extension Service, Bozeman, MT. 5 pp. http://www.montana.edu/wwwpb/pubs/mt199707.html
- Ford, T., G. Rupp, P. Butterfield and A. Camper. 2005. *Protecting Public Health in Small Water Systems: Report of an International Colloquium*. Montana Water Center, Bozeman, MT. http://watercenter.montana.edu/pdfs/colloquium report final.pdf
- Rupp, G.L. and M. D. White (editors). 2004. *Proceedings of the 7th International Symposium on Fish Physiology, Toxicology and Water Quality*. Tallinn, Estonia, May 12-15, 2003. U.S. EPA Ecosystems Research Division, Athens, GA. EPA/600/R-04/049. 350 pp. http://water.montana.edu/symposium/proceedings/
- Rupp, G.L. 2001. The challenges of installing innovative treatment at small water systems. *Journal of Environmental Health* 64(1): 22-25.
- Samet, J., M. Araya, S. Baker, H. Dieter, J. Donohue, J. Forslund, K. Hellemann, G. Lagos, G. Rupp. 2000. *Acute Gastrointestinal Effects of Copper in Drinking Water: Methods for Conducting Public Health Investigations*. May, 2000. School of Public Health, Johns Hopkins University, Baltimore, MD. 124 pp.
- Abdo, G, B. Keller and G. Rupp. 1999. Ion exchange and flushing for copper corrosion control in small public water systems. Proceedings of the American Water Works Association Annual Conference, Chicago, Illinois, June 22, 1999. AWWA, Denver, CO.
- Rupp, G.L. 1996. Water Conservation for Montana Communities. MSU Extension Service, Bozeman, MT. 18 pp.
- Rupp, G.L. 1996. Pollution Prevention and Pretreatment for Publicly-Owned Treatment Works. Report prepared for US Environmental Protection Agency, Region VIII. MSU Extension Service, Bozeman, MT.
- Rupp, G.L. 1995. Onsite Wastewater Management Options for Montana Businesses. MSU Extension Service Bulletin EB 136. Bozeman, MT. 64pp.
- Rupp, G. L. (editor). 1994. Characterizing Containerized Mixed Low-Level Waste for Treatment. US EPA Office of Research and Development, US Department of Energy Office of Technology Development. EPA/600/R-94/149. Center for Environmental Research Information, Cincinnati, OH.
- Rupp, G. and R. Jones (editors). 1993. *Heterogeneous Wastes Characterization: Methods and Recommendations*. CRC Publishers, Boca Raton, FL. 144 pp.

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DEBRA S. EARL

WORK EXPERIENCE

Director, Montana Watercourse, Bozeman, MT September 2007 - Present

- Oversee and manage statewide water education program with community, K-12 and volunteer monitoring programs.
- Supervise staff of 3-4.
- Co-Chair statewide watershed network, Montana Watershed Coordination Council.
- Secure and administer grant funding.
- Coordinate and collaborate with agencies, non-profits, businesses and others to conduct watershed outreach and training programs.
- Oversee strategic planning for organization.

Community Outreach Coordinator, Montana Watercourse, Bozeman, MT

December 2004 – August 2007

- Developed and implemented a statewide water resource education program for adults.
- Developed partnerships with local sponsors to conduct workshops and trainings on water resource topics: water quality monitoring, wetland protection & water rights.
- Assisted in securing grant funding.
- Supported local watershed group efforts.
- Authored publications such as guidebooks, news articles and brochures on water topics.

Water Policy Researcher, Greater Yellowstone Coalition, Bozeman, MT June 2004 – August 2004

- Researched local water policy, investigated causes and solutions to water conflicts.
- Developed public relations strategy and publications by interviewing stakeholders including ranchers, developers, water managers, scientists, and conservationists.

Hydrologic Technician, U.S. Forest Service Saratoga, WY. Summer 2002 and 2003

- Monitored streamflow at water diversion facilities in remote backcountry locations.
- Implemented watershed restoration projects.
- Collected data and made recommendations concerning road and irrigation ditch conditions and future projects with the goal of reducing watershed degradation.
- Interpreted and reduced field data.
- Organized and maintained field equipment.
- Trained other employees and prepared training guidelines for fieldwork protocols.

Teachers Assistant, Colorado State University Ft. Collins, CO. Spring 2003

• Water Quality and Principles of Watershed Management.

OUTDOOR EXPERIENCE

National Outdoor Leadership School (NOLS) Instructor Vernal, Utah. July 2003, May 2004

 Led groups on backcountry expeditions. Taught kayaking, rafting, camping, leadership, safety skills, and instructed on "leave-no-trace" ethics in the wilderness.

Raft Guide, Echo Canyon River Expeditions Canon City, CO, Summers 1996, 1997 and 1998

INTERNATIONAL EXPERIENCE

Peace Corps Volunteer, Bolivia, South America September 1998 – October 2000

- Organized and supervised the design and installation of water system and latrine projects in three rural communities.
- Counseled and trained local water committees in the construction and maintenance of water systems and latrines.
- Coordinated with three villages to apply for funding, procure materials, and install water lines.
- Taught health and hygiene workshops at several remote villages.
- Tutored high school students in English.
- Resident of a small, native village at an elevation of 12,000 feet. Assisted at a health clinic.

EDUCATION

M.S. Watershed Science, GPA 3.67, May 2004 Colorado State University, Ft. Collins, CO

B.A. Psychology, Cum Laude, GPA 3.45, May 1996 Wake Forest University, Winston Salem, NC

RELATED COURSEWORK

Land Use Hydrology, Watershed Measurements, Cumulative Effects, Fluvial Geomorphology, Stream Restoration, Environmental River Mechanics, and Soil Physics.

Stephen J. Guettermann Environmental Outreach Professional

Skills Summary

- Fifteen years experience in business and non-profit management
- Excellent research and writing skills emphasis on education
- Effectively networks with officials, scientists, educators, and business owners
- > Proven initiative to create education plans that solve problems and accomplish objectives
- > Works effectively on concurrent projects; team player able to develop key relationships
- Able to present many types of information to diverse groups of people
- > Professional training includes project management, communications and mediation

Present Position - Assistant Director for Education and Outreach, Montana Water Center

Work with scientists, MUS faculty and water resource managers throughout the state to promote science-based management and outreach for state issues relating to water quality and water quantity. Manage the USGS Water Institute Program in Montana. Organize the annual Montana Water Conference. Support policy and decision-makers on water resource management issues. Promote the preservation and restoration of natural functioning aquatic systems.

1/03 - 5/05 - Pollution Prevention (P2) Specialist - Region 8 P2 Information Center

Worked with assistance providers nationwide to produce and disseminate P2 education for government agencies, businesses, schools, and the public. Specific tasks involved land use planning, outdoor recreation, resource efficient construction, and environmental management on public lands. Also worked on several national EPA projects for compliance assistance and pollution prevention. Developed and maintained websites. Located at Montana State University.

5/96 – 11/99 – General Manager – Herbs for Kids, Inc (HFK), Bozeman, Montana

Responsible for daily operations and annual plans of HFK, a natural products manufacturing company. Worked closely with national sales team, production manager, herbal educators and owner to assure growth and financial viability. Company grew faster than the industry during this time. Helped the owner position the company for sale. Considered to have among the industry's best marketing and education programs. Sales more than tripled in less than four years.

4/92 - 4/96 - Education Coordinator - Montana Conservation Corps (MCC), Bozeman, Montana

Assisted Executive Director with the overall operation of the MCC, a statewide conservation corps that keys on environmental work and applied education. Hired, trained, and supervised crew supervisors and leaders in the field, specifically with education and personnel management. Interacted with land management agencies throughout the state to provide conservation work and environmental education. The MCC was among the country's top AmeriCorps programs during this time.

Education

Kansas State University – Masters of Science; Science Education Kansas State University – Bachelors of Science; Natural Resources Management

Community Service

Steve has long been involved with various conservation groups in Montana. He produced a book for the Greater Yellowstone Coalition titled: "Environmental Profile of the Greater Yellowstone Ecosystem," sponsored a corporate membership to GYC and trained crews to build trails for the Gallatin Valley Land Trust. He frequently volunteers to teach for the Bozeman Adult Community Education program and volunteers for other local and state nonprofit organizations.

Kathryn A. Sayles

907 West Koch Street Bozeman, Montana 59715 406.551.4875 Kathryn.Sayles@duke.edu

EDUCATION

Master of Education, General Science Broadfield and Biology Extended Major Certifications

Montana State University (Northern Plains Transition to Teaching) Bozeman, MT

Graduation date: May 2010, Cumulative GPA: 4.0

Master of Environmental Management, Economics and Policy

Duke University, Durham, NC

Graduation Date: May 2008, Cumulative GPA: 3.6

Thesis: "Buying into Local Agriculture: A Market and Sociopolitical Analysis of the U.S. Food System"

Bachelor of Science, Biology, Minor: Environmental Science

Lafayette College, Easton, PA

Graduation Date: May 2005, Cumulative GPA: 3.4

Thesis/Publications: "Macroinvertebrate Community Characteristics Above and Below a NJ Reservoir"

MANAGEMENT EXPERIENCE

Policy Analyst

Abt Associates Inc., Bethesda, MD

June 2008 – December 2008

- Provided technical support to USEPA for 45 to 50 hours per week
- Improved CWA and SPCC regulations through innovative management approaches
- Successfully contributed to methodology creation, data analyses, regulatory language development and review, final report preparation and budget oversight
- Published regulation fact sheets to expand relations among public and private officials

Conservation Advocate

Penn Environment (Penn PIRG), Philadelphia, PA

May 2007 – August 2007

- Effectively mediated efforts among developers, public officials, non-profit organizations, industries and community to increase support of organization goals
- Published articles to enhance knowledge of hazardous waste sites, promote sustainable development and reduce Clean Water Act violators
- Successfully obtained \$200,000 through grant writing for global warming research

Environmental Scientist

Mid-Atlantic Associates, Colmar, PA

August 2005 – August 2006

- Successfully managed soil and groundwater remediation projects for 45 to 60 hours per week
- Served as regulatory liaison among DEQ, insurance companies and homeowners
- Responsible for proposal preparation, cost assessment, technical work plan development and implementation, community correspondence, field oversight, data analyses, final report preparation and budget oversight
- Selected as forensics supervisor to ensure proper allocation of costs

Resume of Kathryn A. Sayles Page 1 of 3

Head Resident Advisor

Office of Residence Life, Lafayette College, Easton, PA August 2004 – May 2005

- Effectively supervised and evaluated 10 Resident Advisors and 230 undergraduates
- Actively managed \$2,000 program budget, facilitated weekly staff meetings, administered biannual training workshops for over 80 Resident Advisors and Administrative staff, created staff developments, contributed to monthly newsletter and coordinated on-call duty schedule
- Chosen to present for Mid-Atlantic Conference for Undergraduate Housing Officers at national conference to over 500 officials

WATER & NATURAL RESOURCE EXPERIENCE

Dissolved Chemical Exposure Analyst

Duke University, Durham, NC

January 2008 – May 2008

- Routinely researched impact of policy language on over 200 community members statewide
- Effectively served as primary contact for community members to improve retention rate
- Recruited participants; administered surveys; conducted follow-up interviews; performed data coding, entry and analyses to better understand public perceptions for 10 to 12 hours per week

Nonpoint Source and Agriculture Researcher

Duke University, Durham, NC

August 2006 – May 2008

- Aggressively promoted local agriculture and best management practices through market and sociopolitical analyses for 30 to 45 hours per week
- Efficiently worked with retail owners, local farmers and government officials to enhance wise land use and improve water quality
- Successfully defended masters thesis before multidisciplinary audience by identifying management problems, developing research protocol, methodology, solutions and issuing policy suggestions to improve farmer income

Water Quality Management and Decision Analyst

Duke University, Durham, NC

August 2006 - May 2007

- Served on technical advisor team for North Carolina state watershed management reform
- Actively used expert contributions to create policy suggestions and improve resource plans
- Performed expert elicitations, utility assessments, TMDL cost/benefit analyses, empirical and mechanistic model reviews and data entry for 8 to 10 hours per week

Teaching Assistant - Biology and Vascular Plants

Lafayette College, Easton, PA

August 2003 – May 2005

- Effectively served as primary laboratory instructor while administering weekly laboratory component for 12 to 18 undergraduate students
- Developed and implemented weekly lab reports and exams to improve and assess students' understanding of general biology, plant anatomy and ecology
- Responsibly held regular office hours and attended weekly meeting with supervising professor to discuss teaching methods, laboratory materials and assessment techniques

Resume of Kathryn A. Sayles Page 2 of 3

HONORS & AWARDS

Pennsylvania Academy of Science National Conference for Undergraduate Research

Pepper Prize

Aaron O. Hoff Award Order of Omega

National Residence Hall Honorary Award

Mid-Atlantic Conference for Undergraduate Housing Officers

Philadelphia Marathon

Published Spring 2005 Published Spring 2005 Nominated Spring 2005 Nominated Spring 2005 Inducted Spring 2004 Awarded Fall 2004 Published Fall 2004 10th Place Fall 2002

SKILLS

Technical Skills

- Proficient in the use and maintenance of GPS, Surber sampler, Hester-Dendy plates, kick net, cast net, flow meter, DO probe, Secchi disk, dichotomous key (specialty in plant and macroinvertebrate identification), microscopy, enzyme assays, cell staining, electrophoresis, chromatography (thin layer, column), centrifuge, spectroscopy (light, NMR, IR) and dissection
- Certified in S.C.U.B.A. and Adult and Pediatric CPR
- Proficient in black and white, color and slide photography and development

Support Skills

- Experience with NEPA, ESA, CWA, FACTA, CAA, SDWA, RCRA, CERCLA and Mangnuson-Stevens implementation
- Proficient with PC and Mac Platforms
- Excellence in SAS, Stata, R, Audacity, Microsoft Office, Adobe Photoshop and Quark
- Experience with Qual2E/Qual2K, SWAT, Eutromod and EcoStat Software
- Partial fluency in both written and spoken French

ACTIVITIES

Volunteer – Blue Water Task Force

Big Sky, MT

January 2009 – present

Member - MT Environmental Ed. Assoc

Statewide, MT

January 2009 – present

Volunteer - MT Outdoor Science School

Bozeman, MT

January 2009 – present

Volunteer – Organic Agriculture Development Researcher – Rodale Institute

Kutztown, PA

August 2005 – December 2005

Biology Tutor – Lafayette College

Easton, PA

August 2004 – May 2005

Editor-in-Chief - Technology Clinic

Easton, PA

August 2004 – May 2005

Member – Society of Environmental Toxicology and Chemistry

Nationwide

August 2004 – present

Aquatic Systems and Fish Ecologist

Lafayette College, Easton, PA

August 2003 – May 2005

Volunteer - Children's Workshop Leader and Information Aid - Longwood Gardens

Kennett, PA

May 2003 – August 2003

Resume of Kathryn A. Sayles Page 3 of 3



June 15, 2009

Gretchen Rupp, Director
Assistant Director for Outreach
Montana Water Center – Montana State University
101 Huffman Building
Bozeman, Montana 59717

Re: Support for Wetlands Professional Training

Dear Gretchen:

As someone who has developed and worked with partners on wetland projects for the past 23 years, I'm excited for the opportunity tp support of the Water Center's proposed project Building Wetland Professional Capacity in Montana. Given the current fiscal climate, wetland professionals are increasingly challenged to secure travel authorization for professional training, especially that which is offered out of state. Maintaining a work force of wetland professionals who are up to date in their science is critical to our vision of healthy, sustainable wetlands into the future. Montana is particularly challenged by its size and diversity of ecosystems. As I work to develop wetland restoration, enhancement, and protection projects, I can definitely benefit from professional training that incorporates real-world training reflective of Montana's unique landscapes. I strongly feel that our many partners and sponsors of the Montana Wetlands Legacy Partnership (now over forty agencies, land trusts, conservation organizations, and private businesses) would benefit immensely from hands-on wetland training to bring us all up to pace with cutting-edge technologies, shared learning, and regulatory requirements necessary to create successful wetland projects. The opportunity for periodic in-state training that includes MSU-granted continuing-education credits would be very valuable to me. I especially appreciate that the Montana Water Center/ Watercourse plans to conduct an extensive and comprehensive needs assessment to ensure that the topics of instruction are those most pressing as well as tailored to the needs of Montana.

I wish you every success with your proposal and look forward to hearing from the Water Center during the needs assessment regarding this truly winning idea!

Sincerely,

Tom Hinz, Coordinator

Montana Wetlands Legacy Partnership



United States Department of the Interior Fish and Wildlife Service



Medicine Lake National Wildlife Refuge Complex 223 North Shore Road Medicine Lake, Montana 59247 June 19, 2009

Gretchen Rupp, PE Director Montana Water Center 101 Huffman Building Bozeman, MT 59717-2690

Re: Project Support

Dear Ms. Rupp:

I'm writing on behalf of the Medicine Lake National Wildlife Refuge, in support of your project to initiate a periodic series of training opportunities for Montana wetlands professionals. "Building Wetlands Professional Capacity in Montana" will help me and my colleagues do a better job to identify wetland resources, help us better understand wetland regulations and improve our ability to protect and manage wetlands. Like all technical professionals, we need to keep up with scientific knowledge, improving field methods and changing regulations in order to best serve the public and wildlife. Up until now we've had almost no chance to acquire this training within Montana. And so, it's great to see that the Water Center, that has so much experience with training of water and wastewater treatment operators, is stepping up to help wetlands professionals get the continuing education we need.

I'm very hopeful the Center will be funded to conduct this project, and I look forward to sending my staff to these courses in Montana. In addition, Medicine Lake NWR will offer to host a training session in Northeast Montana in the heart of the Prairie Pothole Region otherwise known as the Missouri Coteau.

Best regards,

Jerry Rodrigue Project Leader



SOCIETY of WETLAND SCIENTISTS

"an international organization dedicated to the conservation, management and scientific understanding of the world's wetland resources"

June 22nd, 2009

Gretchen Rupp, Director Montana Water Center 101 Huffman Building - MSU Bozeman, MT 59717-2690

Re: Project Support

Dear Gretchen:

I'm writing on behalf of the Rocky Mountain Chapter of the Society of Wetland Scientists regarding the Water Center's proposal to EPA Region 8 to initiate a series of wetland professional trainings in Montana. We understand the project will target two different audiences: natural resource professionals who deal with wetlands from time to time and technical specialists who deal strictly with wetlands. Both of these audiences need more wetland training opportunities within the state as everyone's budgets for travel will be very stretched for the foreseeable future. Obviously, the members of the Rocky Mountain Chapter of SWS are especially interested in advanced training opportunities for wetland specialists. I understand from your proposal that you plan to put in place a procedure so that the advanced trainings will qualify course attendees for credit toward certification as SWS Professional Wetland Scientists. This will be a very good thing; it will raise the level of our profession generally in the state to our benefit and that of our wetlands. At present there are only eight certified PWS in the state.

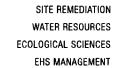
On behalf of the Chapter, I'm hopeful that EPA will see fit to fund this project and I look forward to the opportunity for advanced wetland training in Montana!

Best regards,

Scott Woods Ph.D.

Sio & Work

President, Rocky Mountain Chapter, Society of Wetland Scientists Associate Professor of Watershed Hydrology, University of Montana





June 16, 2009

Wetland Program Development Grant Solicitation Attn: Brent Truskowski U.S. EPA Region 8 (8EPR-EP) 1595 Wynkoop Street Denver, CO 80202-1129

c/o Gretchen Rupp Montana Water Center 101 Huffman Building Bozeman, MT 59717-2690

Dear Mr. Truskowski and colleagues:

I am pleased to offer my support for the proposed project entitled Building Wetlands Professional Capacity in Montana. I and my peers are expected to keep up with ongoing advances in technical methods, and changes in official guidance and laws and regulations. We can stay somewhat updated by reading professional literature, but no substitute exists for supervised practice in actual wetlands and personal training. Given our large landscape and travel expense associated with out-of-state training opportunities, combined with the paucity of training opportunities in Montana, it provides for a needed alternative training resource. Finally, Montana's wetland professionals could benefit immensely from having training specific to Montana's unique ecosystems.

I'm very pleased to learn that we may soon have an opportunity for professional wetland education, through the Montana Water Center/Watercourse project. It is particularly important that this is not a one-time undertaking, but rather the beginning of a sustainable program of continuing education for wetlands professionals in our state.

I'm confident an ongoing program of this kind would improve the quality of wetlands projects in Montana, and I urge your support and funding for this important project.

Russell F. Smith

Water Resource Specialist OASIS Environmental, Inc.

RECEIVED

JUN 19 2009

Montana Water Center

Phone: (406) 222-7600 Fax: (406) 222-7677



DUCKS UNLIMITED, INC.

Montana Field Office

P.O. Box 183 Elliston, MT 59728 406/492-2002 Telephone rsanders@ducks.org E-mail

June 10, 2009

Wetland Program Development Grant Solicitation Attn: Brent Truskowski U.S. EPA Region 8 (8EPR-EP) 1595 Wynkoop Street Denver, CO 80202-1129

c/o Gretchen Rupp Montana Water Center 101 Huffman Building Bozeman, MT 59717-2690

Dear Mr. Truskowski and colleagues:

Ducks Unlimited is pleased to offer support for the proposed project entitled "Building Wetlands Professional Capacity in Montana." DU has a 25-year history of wetland conservation in Montana and we recognize the importance of having access to quality educational opportunities to keep up with ongoing, sometimes confusing changes in technical methods, official guidance, laws and regulations governing these vital resources.

As the Montana Manager of Conservation Programs for Ducks Unlimited, I am eager to join the Montana Water Center and Montana Watercourse as a partner willing to participate in and share my knowledge in trainings. I can promise in-kind match for at least one full day of training equal to \$500.00 (\$73/hr).

I'm confident an ongoing program of this kind would improve the quality of wetlands projects in Montana, and I urge your support and funding for this important project.

Sincerely,

Robert L. Sanders

Manager of Conservation Programs - Montana

Ducks Unlimited, Inc.

RECEIVED

JUN 12 2009

Montana Water Center

Montana Department of Transportation 2701 Prospect Avenue | PO Box 201001 Helena, MT 59620-1001 406.444.6200 TTY: 800.335.7592



June 19, 2009

Gretchen Rupp, PE, Director Montana Water Center 101 Huffman Building Montana State University Bozeman, MT. 59717-2690

Subject: MDT Wetland Mitigation Program

Dear Ms. Rupp:

Thank you for allowing me to provide this letter of support for the proposed Montana Water Center / Watercourse professional wetland education training proposal for the state of Montana. I can fully support this effort by the MT Water Center/Watercourse to initiate regular wetlands professional training opportunities here in Montana. As it currently stands, there are very limited opportunities for training and/or continuing wetland education courses in Montana for wetland professionals. The majority of current continuing education and professional wetland training opportunities are found out-of-state, which due to fiscal or travel constraints prevent natural resource professionals in Montana from attending this much needed training.

The development of consistent in-state training and educational opportunities for Montana's wetland professionals would be appropriate for an entity like Montana State University (MSU) to undertake through the Water Center / Watercourse to initiate and organize annual wetland training courses within Montana. The development of such a program would allow Montana natural-resource professionals in positions ranging from watershed manager to university professor to plan schedules for in-state wetland training opportunities if these courses were available on a consistent basis. For those wetland professionals needing continuing education credits to maintain certification as either a Professional Wetland Scientist or a Certified Wetland Specialist, such a state training program would be a welcome addition as current training opportunities here in Montana are a rare commodity indeed.

I fully support the efforts outlined in the MSU Water Center / Watercourse to move forward with a program of continuing education and training opportunities for Montana's wetland professionals.

If you have any questions or require any further support, please contact me at (406) 444-6224.

Sincerely,

Lawrence J. Urban Wetland Mitigation Specialist Environmental Services Bureau

Attachments

Cc w/o att: T. Martin, P.E., Environmental Services Bureau Chief

Wetland file